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ATTORNEY DOCKET NO.: 2002832-0002

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant:	Sosin	Examiner:	Blau
Serial No.:	09/248,515	Art Unit:	3711
Filing Date:	February 8, 1999		
Title:	GOLF CLUB AND METHOD OF DESIGN		

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

APPEAL BRIEF UNDER 37 C.F.R. § 1.192

Applicant appeals to the Board of Patent Appeals and Interferences (the "Board") from the Examiner's rejection of claims 50-54 and 59-69. A Notice to this effect was filed pursuant to 37 C.F.R. § 1.191(a) on May 10, 2004. The due date for filing an Appeal Brief or alternatively a Request for Continued Examination is July 10, 2004; therefore, applicant submits that this Appeal Brief (the "Brief") is timely filed on July 2, 2004. Pursuant to 37 C.F.R. § 1.192(a), this Brief is being filed in triplicate.

Also enclosed is a check to cover the $165.00 fee under 37 C.F.R. § 1.17(c) for the Appeal Brief. Please charge any additional fees (or credit any overpayment), to our Deposit Account 03-1721.

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July 2 — Date

Kathy Hart Gagnon — Signature

Kathy Hart Gagnon

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Real Party in Interest

As a result of an assignment by the inventor, the real party in interest in this application is Feil Golf, LLC. An assignment from inventor Howard Sosin to Feil Golf, LLC was recorded in the Patent and Trademark Office on June 30, 2003 at Reel 014214; Frame 0657.

Related Appeals and Interferences

No pending appeals or interferences are known to Appellant, Appellant's legal representative, or Appellant's assignee that will directly affect or be directly affected by the Board's decision in this appeal. Similarly, no other pending appeals or interferences are known that may have a bearing on the Board's decision in this appeal.

Status of Claims

The application was filed with claims 1-20. Claims 1-20 were the subject of a Restriction Requirement mailed June 12, 2000. Claims 1-3, 5-10, 12 and 14-20 were elected June 22, 2000 in response to the Restriction Requirement. Claim 20 was canceled in an Amendment filed November 16, 2000; claims 1-3, 9-11, 14 and 17 were amended; and new claims 21-28 were added. Claims 1-3, 5-10, 14-19, 21-23 and 25-28 were canceled in an Amendment filed June 14, 2001 along with a first Request for Continued Examination; claim 12 was amended; and new claims 29-55 were added. New claims 56-58 were added in an Amendment filed November 15, 2001. Claims 4, 11-13, 24, 29-49 and 55-58 were canceled in an Amendment filed June 21, 2002 along with a second Request for Continued Examination; claims 50-54, 59 and 60 were amended; and new claims 61-65 were added. Claims 50-54, 61 and 62 were amended in an Amendment filed February 19, 2003; and new claims 66-69 were added. Claim 59 was amended in a Supplemental Amendment filed March 27, 2003. Claims 50-51, 53-54 and 59-60 were amended in an Amendment filed September 8, 2003.

Claims 50-54 and 59-69 were finally rejected in an Office Action mailed November 14, 2003. The rejection of claims 50-54 and 59-69 is hereby appealed. A listing of pending claims 50-54 and 59-69 is provided as **Attachment I**.

Status of Amendments

This Brief is being submitted together with an Amendment that amends claims 52, 61, 62 and 66. These claims have been amended in order to address certain comments that were made by the Examiner in the Advisory Action mailed March 22, 2004. For the purpose of this Brief, Appellant is assuming that this Amendment will be entered since it simplifies the issues that are under appeal. Accordingly, in the following the issues on appeal will be discussed as if they applied to the claims that will be pending *after* entrance of the Amendment. A copy of claims 50-54 and 59-69 that will be pending after entrance of the Amendment is provided as **Attachment II** (the "pending claims").

Summary of Invention

All golf club manufacturers produce golf club heads with specific design lofts. In principle, the design loft is the angle at which the face of the club head should strike the ball. Other design features of the club head including the shape of the sole are based on this principle. Prior to this invention, manufacturers have produced golf clubs by connecting club heads with shafts in such a way that the club face achieves the design loft when the shaft is held in a *vertical* position. Accordingly, golfers could only take full advantage of the design features of traditional clubs by striking the ball with a vertical shaft. In reality, most golfers have a tendency to strike the ball with a shaft that is either past or short of vertical. As a consequence, the "effective loft" that the ball sees when struck by the club rarely equals the design loft that was intended by the manufacturer. The present inventor has recognized this problem and invented a solution. Specifically, the present invention utilizes a "lean angle" in the design of golf clubs to allow golfers to customize the relationship between design and effective loft for one or more clubs in their bag. In contrast to traditional golf clubs, the clubs of the present invention are produced by connecting club heads with shafts in such a way that the club face achieves the intended design loft when the shaft is held in a *non-vertical* position (e.g., 5 degrees past vertical). The invention thereby provides golf clubs that can be customized to a particular golfer's swing characteristics (e.g., a tendency to strike the ball with a shaft that is angled 5 degrees past vertical). As a result, golfers that use these clubs are able to take fuller advantage of the design features of golf club heads.

Issues

The issues on appeal are (referring to §§ **2-7** of Paper 30):

(1) Are claims 51, 53-54 and 59-69 anticipated by Thompson (§ **2**)?

(2) Are claims 50 and 52 obvious in view of Thompson and Scheie (§ **4**)?

(3) Are claims 50-54, 59-60 and 67-68 obvious in view of Ahn, Hirose and Scheie (§ **5**)?

(4) Are claims 64-65 obvious in view of Ahn, Hirose, Scheie and Adams (§ **6**)?

(5) Are claims 61-63, 66-67 and 69 obvious in view of Adams and Hirose (§ **7**)?

Grouping of Claims

The claims stand or fall together for issues numbered (1)-(5) above, as indicated below:

(1) Claims 51, 53-54 and 59-69 stand or fall together.

(2) Claims 50 and 52 stand or fall together.

(3) Claims 50-54, 59-60 and 67-68 stand or fall together.

(4) Claims 64-65 stand or fall together.

(5) Claims 61-63, 66-67 and 69 stand or fall together.

Arguments

Appellant respectfully submits that the rejections made in the Final Office Action mailed November 14, 2003 in the above-referenced case represent a dramatic and troubling example of hindsight reconstruction. This case has been with the Examiner now for almost five years. Perhaps in that time the inventive features have become familiar to him. They remain new to the art, however, as demonstrated by the Examiner's inability to find a single reference that *teaches or suggests* the claimed golf clubs with lean angles.

After over seven Office Actions, including citations of 22 references (in addition to the 28 cited by Appellant), three interviews (two personal and one telephonic), and two Declarations from experienced golf manufacturers, the Examiner has identified no references or prior art documents evidencing that anyone had ever contemplated manufacturing a golf club containing a lean angle as recited in the present claims. Instead, the Examiner has turned up plenty of

references (e.g., Antonius '662, Solheim, etc.) that, consistent with the general golfing knowledge, *teach away* from the claimed lean angle clubs.

The Examiner has worked very hard to find evidence of the claimed invention in the prior art, scrounging up truly bizarre devices (e.g., double shafted training clubs [Izett], clubs with serpentine shafts [Knox], clubs to which the shaft is mounted on the rear face of the head [MacDonald], a wedge with a tri-level sole [Adams]) that in fact do not represent the claimed invention but could have been construed, if effort were applied, to have fallen within the language of some of the earlier versions of the claims. The Examiner has finally resorted to scouring the literature for any picture of a golf club that could be construed to have a non-zero lean angle.

None of the references now cited by the Examiner mentions a lean angle, or the desirability of such. Each reference contains many pictures of the intended club heads; most depict only a tiny portion of a shaft, and do not discuss the shaft or shaft-head connection, at all. In some such pictures, the Examiner sees a lean angle, though there is no indication in the supporting text that the cited picture is intended to depict a club any different from those in the other pictures. Even in responding to Appellant's comments, the Examiner offers no *evidence* that the prior art disclosures intended to represent a golf club with a lean angle.

After understanding and considering the features and advantages of the claimed golf clubs, the Examiner has returned to the literature time and time again to try to find evidence of prior development. There is none. The references relied on by the Examiner simply do not teach what he cites them for. Moreover, Appellant has submitted declaratory evidence from two different experienced golf club manufacturers in support of salient points. The Examiner does not point to any fault or problem with these Declarations or the credentials of the declarants, but nonetheless rejects the proffered evidence in favor of his own opinion. This is not acceptable.

The presently claimed golf clubs are novel and non-obvious. The claims are fully supported by the specification. The patent should issue.

Each of the levied rejections is discussed individually in detail below.

Claims 51, 53-54 and 59-69 are not anticipated by Thompson

This rejection is unchanged from the prior Office Action. The Examiner points to Fig. 2 of Thompson as depicting an iron-type club whose shaft forms a non-zero lean angle with the

vertical when the head rests on its sole with its impact face positioned at its design loft. Appellant respectfully disagrees.

Thompson has five Figures, all of the same golf club head. The inventive features of this head, as described by Thompson, are its downwardly tapered keel and weight-receiving passage(s) between the keel and a hollow in the rear side of the head. Fig. 2 is said to be a toe end elevation of the head (Drawing Description, column 1, line 68). Other than this characterization, there is no specific description of Fig. 2 in Thompson. Furthermore, there is no discussion relating to *any* of the Figures that addresses the shaft/head connection. All we know is that the iron that is depicted "is intended to represent a wedge" (column 2, lines 15-16). Thus, those of ordinary skill in the art would understand that, other than its keel and weighting features, the depicted club is a *standard wedge*. As Appellant has previously documented through Declaratory and other evidence, a standard wedge has a zero lean angle (see, for example, ¶ 4, 6 and 11 of the Declaration by Mr. John Hampford, President and CEO of Hoffman Forged Products, that was filed on November 15, 2001). This evidence establishes that the claimed golf clubs, containing a lean angle, are a *radical* departure from the standard.

In the Advisory Action, the Examiner dismissed the Hamford Declaration as, basically, Mr. Hamford's opinion. The Examiner prefers his own opinion. This is inappropriate. The Declaration is the sworn statement of an individual of at least ordinary skill in the art, who has reviewed the cited art for its teachings and swears that the Examiner is incorrect in his interpretation. The Examiner is not entitled to ignore this and to substitute his personal view. As explained in MPEP § 716.01 if the Examiner finds that the evidence in the Declaration is insufficient to overcome the rejection, he must specifically explain *why* the evidence is insufficient.

To the extent that the actual picture presented in Fig. 2 could be viewed as having a lean angle (in hindsight after considering the present specification), those of ordinary skill in the art would have understood it to be merely an inaccurate representation of a standard club. There is no indication in Fig. 2, or anywhere else in Thompson, that the Figures are drawn to scale, or with angular precision. It is well established that unexplained features of a drawing must be evaluated for what they *reasonably* disclose and suggest to one of ordinary skill in the art. *In re Aslanian*, 590 F.2d 911, 200 USPQ 500 (CCPA 1979). Fig. 2 of Thompson would not reasonably disclose the claimed golf clubs to a person of ordinary skill in the art. In support of

this position, Appellant has previously submitted (with the Response to Final Office Action filed March 1, 2004) a Declaration under 37 C.F.R. § 1.132 by J. Rodney Loesch, Director of Golf at the Connecticut Golf Club, President of the Metropolitan PGA, and person of at least ordinary skill in the art. Mr. Loesch has reviewed the present specification and the Thompson reference, and concludes that Figure 2 of Thompson is not intended to be an accurate scaled drawing, and does not teach a club with a lean angle. The rejections over Thompson should be removed.

In the Advisory Action, the Examiner did not address the Loesch Declaration. As noted in MPEP § 716.01, all entered Declarations must be acknowledged and commented upon by the Examiner in the next succeeding action. Due consideration of the Loesch Declaration is respectfully requested. For the convenience of the Examiner and the Board, a complete copy of the Response to Final Office Action submitted March 1, 2004, including the Loesch Declaration, all Exhibits, and a copy of the stamped return postcard indicating that all materials were received in the USPTO mailroom are included with this Brief as **Attachment III**.

Claims 50 and 52 are not obvious in light of Thompson and Scheie

Scheie, like Thompson, describes golf club heads whose unusual feature is their weighting; other aspects of the heads and clubs that incorporate them are standard. Thus no combination of Thompson with Scheie et al. could render obvious the present claims; this rejection should also be removed.

The Examiner has maintained his rejections over Thompson (and Scheie) by stating "the more the Examiner searches the more woods/irons are found with lean angles". The evidence offered in support of this statement is "see the *conclusion below* as well as previous cited art". Appellant finds these comments remarkable. The previous cited art did not teach lean-angle containing clubs as recited in the claims. If it had, the Examiner would not have had to keep searching. Thus, the only *evidence* provided that Thompson describes a lean-angle containing golf club is the Examiner's *conclusion* that it does.

For those claims (50 and 52) that relate to forged or cast clubs, the Examiner has included Scheie, which is relied upon for teaching forging or casting of a head. A reference to Scheie for forging or casting of a head is not necessary, as forging and casting were certainly known in the art. In fact, the reference to forging and casting in Scheie is one to "conventional investment casting and forging techniques" (Scheie column 4, lines 1-2). Scheie describes a club head with

a cavity designed to achieve particular weighting characteristics. There is no discussion of the connection between head and shaft. In fact, no shaft is depicted anywhere in Scheie! A combination of Thompson and Scheie would yield a golf club with a very bizarre head, but a standard connection between head and shaft.. No such combination could render obvious the presently claimed invention.

Claims 50-54, 59-60 and 67-68 are not obvious in light of Ahn, Hirose and Scheie

This rejection is new to the Final Office Action. In the prior Office Action, the Examiner had cited but not relied upon Ahn.

Ahn describes golf clubs that include a means for increasing, decreasing or adjusting the position and amount of weights in a golf club head (e.g., see Abstract). Ahn does not discuss the design loft or bounce of the golf club heads, nor does Ahn discuss the concepts of effective loft and lean angle. There is no teaching or suggestion in Ahn of the claimed golf clubs. The inventive feature of Ahn is the adjustable weight of the golf club heads; those of ordinary skill in the art would understand other aspects of the depicted clubs to be conventional. As discussed above, Appellant has already established that a lean angle represents a *radical* departure from the conventional (both at the time Ahn was filed and today). There is no discussion in Ahn of the desirability of a lean angle, but the Examiner purports to find one in Fig. 5. No dimensions are given in Fig. 5, the ground is not indicated, and only a tiny piece of shaft is shown. Appellant has previously argued that, to the extent that Fig. 5 (or any other Figure in Ahn) could be construed to depict a club with a lean angle, it is merely because the Figure is an inaccurate rendering of a standard club. The Examiner has disagreed.

In the Response to Final Office Action filed March 1, 2004 (and included herein as **Attachment III**), Appellant attempted to follow the Examiner's reasoning and calculate "lean angles" assuming that the Examiner is correct that Fig. 5 of Ahn was intended to be an accurate, scaled drawing. The Examiner did not address this point in the Advisory Action, asserting that the Exhibit including the calculations was not received. However, as noted above, **Attachment III** includes a stamped copy of the postcard indicating that these materials *were* received. The argument should have been considered. As can be seen from the Exhibit submitted with the Response to Final Office Action (see **Attachment III**), Appellant attempted to define a reasonable ground line and its perpendicular in order to calculate any depicted "lean angle".

According to these calculations, the purported "lean angle" in Fig. 5 of Ahn would be 15 degrees. Appellant has performed a similar analysis for Figs. 2, 9, and 12, and has calculated "lean angles" of 14, 12, and 15 degrees respectively. Even if the Examiner were correct, therefore, and Ahn did intend to depict a lean angle, it would be outside the scope of the claimed lean angle recited, for example, in claims 53 or 66. Moreover, as discussed more fully below, similar analyses of the other references pointed to by the Examiner make perfectly clear that Ahn, like the other references (all of which describe some novel aspect of a golf club *head*), does not intend to accurately represent the head/shaft connection.

In paragraph 8 of the previous Office Action mailed May 22, 2003, the Examiner discussed Ahn (over which no rejections were levied) together with a reference by Solheim (specifically Fig. 6 of Solheim). The Examiner has dropped the reference to Solheim in the Final Office Action, and it is a telling omission. As Appellant has previously discussed, Solheim, like many other prior art references, teaches explicitly that the club of Fig. 6 (or Fig. 3 or 5) has a zero lean angle. Indeed, the lean angle is the angle measured between the shaft and the vertical *when the head rests on its sole so that its face achieves its design loft.* Figs. 3, 5 and 6 of Solheim show a club that has a vertical shaft (i.e., zero lean angle) when the head rests on its sole so that its face achieves its design loft (the design loft is labeled angle "A" in Figs. 3, 5 and 6, see lines 24-26, column 3). Thus, Solheim is another example of the understanding, well established in the art prior to the present invention, that clubs should be forged with a zero lean angle.

In levying his rejection in the Final Office Action, the Examiner has replaced the Solheim reference with Hirose. Hirose is relied upon as showing an iron club having a single straight shaft, which it does. The single straight shaft of Hirose is connected to the head of the club with no lean angle. There is no combination of Ahn and Hirose that could render obvious the presently claimed invention. In fact, even assuming that a person of ordinary skill in the art would read Ahn to teach a golf club containing a lean angle, Appellant respectfully submits that such a person, wishing to manufacture a golf club based on the teachings of Ahn and Hirose, would be much more likely to select the standard, no-lean-angle connection of Hirose rather than the 15 degree "lean angle" of Ahn.

Scheie has been discussed above and adds nothing to any combination of Ahn and Hirose that could render obvious the claimed invention. Claims 50-54, 59-60 and 67-68 are not obvious in light of Ahn, Hirose and Scheie.

Claims 64-65 are not obvious in light of Ahn, Hirose, Scheie and Adams

This rejection is new to the Final Office Action. The deficiencies of Ahn, Hirose and Scheie are discussed above. Adams is relied on to teach a limitation that is only present in a dependent claim (wedge type head) and, as discussed below, does not remedy the deficiencies of Ahn, Hirose and Scheie. Claims 64-65 are not obvious in light of Ahn, Hirose, Scheie and Adams.

Claims 61-63, 66-67 and 69 are not obvious in light of Adams and Hirose

This rejection is unchanged from the non-Final Office Action mailed May 22, 2003. The Examiner points to Figs. 3-5 of Adams as depicting an iron-type club whose shaft forms a non-zero lean angle with the vertical when the head rests on its sole with its impact face positioned at its design loft. Appellant respectfully disagrees. The heads of the presently claimed golf clubs have a *single* design loft which is in stark contrast with the clubs of Adams (see Figs. 3-5). The golf clubs of Adams are designed to overcome the limitations of golf clubs with single design lofts and Adams even explicitly *teaches away* from such golf clubs (see, column 1, lines 29-40):

> "Normally the sole or bottom surface of a golf club is designed to lie flat on the ground surface to position the club face at a predetermined face loft angle. A golfer may manipulate the club face of a particular lofted club to alter the loft face angle, however this results in the sole of the club head being angled, that is not flat, with respect to the ground surface. To enable a golf club to be used for a number of different loft angles, golf clubs with multiple uses have been developed having a plurality of ground engaging surfaces, each with different angular configurations whereby a single golf club may functionally take the place of two or more golf clubs with different lofts."

Hirose is relied on to teach a limitation that is only present in a dependent claim (single straight shaft) and does not remedy the deficiencies of Adams.

In the Final Office Action, the Examiner did not respond to Appellant's prior comments with respect to Adams. In the Advisory Action, the Examiner noted that claims 61-63, 66-67 and 69 did not require a single design loft. Appellant has remedied this deficiency by filing an Amendment herewith that adds this limitation to claims 61-63, 66-67 and 69. Claims 61-63, 66-67 and 69 are not obvious in light of Adams and Hirose.

The pending claims are patentable over the prior art made of record but not relied on

As with the prior Office Action, the Examiner cites in the Final Office Action to certain art that is not relied upon, but that is considered pertinent. Appellant submits that this art further demonstrates the novelty and non-obviousness of the present invention.

For instance, the Examiner points to Fig. 1B of D'Amico as showing "an iron club being used with a lean angle". Of course, a standard iron club cannot be "used with a lean angle" because the "lean angle" refers to the forged angle between the shaft and the head. D'Amico shows a golfer using a standard club in a swing that de-lofts the club. Prior to the present invention, this strategy was common. In fact, one aspect of the present invention *is* the recognition that such an approach has significant disadvantages. The present specification points out that such de-lofting deprives the golfer of important features of the golf club head. For example, as illustrated in Figs. 3-5 of the present specification and discussed at page 9, line 21-page 11, line 6, it is common for golfers to tilt (and de-loft) an existing club for a particular shot. However, as taught by the present invention, such tilting deprives the golfer of the benefits of other features of the golf club head. The presently claimed clubs differ from standard clubs in the attachment of the shaft to the head at a non-zero lean angle, thereby allowing a golfer to achieve the benefits of the golf club head. For example, where Fig 7a of the present specification could represent a standard club, Figs. 7b and 7c represent inventive clubs. They are patentably distinct.

In the Advisory Action, the Examiner seems to recognize that Fig. 1B of D'Amico shows a golfer actively delofting a standard club, not a golf club with a lean angle: "Clearly there is an angle between the shaft and vertical which the golfer is leaning the shaft to". The Examiner then suggests that "it would be obvious to form a sole flat in this condition to assist the golfer in having a repeatable stance". Appellant is confused by the Examiner's statement.

Is the Examiner suggesting that a skilled person would have been motivated to redesign the club by simply flattening the sole of the club head? If so, Appellant notes that the proposed change would not lead to a golf club with a lean angle. Indeed, the resulting golf club would have a flat sole but would still have a zero lean angle since the relative orientations of the club head face and shaft would be unchanged from the standard club. Besides, the proposed design would completely destroy the originally intended relationship between the face and sole of the

golf club head. Furthermore, the proposed change would mangle the golf club head, and destroy any ability to benefit from the original design of the head. Such an approach would achieve neither the purpose nor the structure of the inventive, claimed golf clubs.

Or, is the Examiner suggesting that a skilled person would have been motivated to completely redesign the connection between the head and shaft in order to produce a club with a lean angle? If so, Appellant strongly disagrees. Nowhere in D'Amico is there any teaching or suggestion of the desirability, or indeed the possibility, of providing a club with a lean angle; it is the present invention, and not D'Amico that provides this solution. In fact, D'Amico specifically teaches that it is *desirable* to strike golf balls with *standard* long irons as shown in Fig. 1B (see column 4, lines 42-58) thereby teaching away from the use of clubs with lean angles. Further, Appellant does not see how adding a lean angle would assist golfers in achieving a repeatable stance. Besides, D'Amico's invention *itself* is a device for assisting golfers to achieve a repeatable stance (see column 1, lines 5-11). Thus, D'Amico's invention solves the very problem that the Examiner argues would provide motivation for a lean angle.

In addition to D'Amico, the Examiner points to a reference by Blough and five by Antonious. According to the Examiner, each of these references includes at least one Figure depicting a club with a lean angle as recited in the present claims. The Examiner is mistaken. Like Thompson and Ahn, each of these references discusses a novel feature of a club head. None mentions a shaft, or anything about the shaft/head connection. None depicts more than a minimal shaft component. Each is concerned with discussing and illustrating only the relevant feature of the club head. None intends to provide an accurate, scaled depiction of any other aspect of a golf club. With the Response to Final Office Action submitted March 1, 2004, Appellant included "calculations" of "lean angles" for each of the Figures pointed out by the Examiner. Of course, as no ground line is indicated, and no design loft is designated for any head, Appellant has had to make a "best guess". The results of these calculations make abundantly clear that the authors were not intending to provide accurate representations. For example, Fig. 3 of Blough, if taken as an accurate, scaled representation, would show a club with a 30 degree "lean angle"! Appellant respectfully submits that it strains credibility to assert that a 30 degree lean angle was intended literally. Comparably, Fig. 3 of the Antonious '386 patent would show a 25 degree "lean angle"! None of the other Figures, even if taken literally, would show a "lean angle" within the range of 3-10 degrees. Moreover, most are so large as to be

clearly not intended as literal representations. Notwithstanding the Examiner's personal opinion, the prior art does not in fact teach or suggest the claimed golf clubs having a lean angle.

Conclusion

As noted above, after five years of examination, the Examiner has identified no references or prior art documents evidencing that *anyone* had ever contemplated manufacturing a golf club containing a lean angle as recited in the present claims. The presently claimed golf clubs are thus *prima facie* novel and non-obvious. Despite this, the Examiner has repeatedly refused to issue the patent. Appellant respectfully submits that this conduct is entirely contrary to the primary purpose of the patent system which is to "promote the progress of the sciences and useful arts". U.S. Constitution, Article I, Section 8. Indeed, Appellant has undoubtedly invented a new and useful device. Several manufacturers have expressed an interest in developing what they recognize as a revolutionary shift in golf club design but all have said they cannot invest in such production until a patent has issued. The relentless prosecution in this case has delayed, rather than promoted, the progress and development of a useful new product. Furthermore, the cost of this prosecution (which has included seven Office Actions, three interviews, two Declarations, a Request for Continued Examination and now this Appeal) would be absolutely prohibitive for most Americans; a system that offers patent protection only to the extremely wealthy does not "promote the useful arts". For all of these reasons, allowance of the present claims is earnestly requested

Respectfully submitted,

Dated: July 1, 2004

Charles E. Lyon, D.Phil.
Limited Recognition Under 37 CFR § 10.9(b)

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Claims Pending before Entrance of Amendment

1-49. **(Cancelled)**

50. **(Previously presented)** An iron-type golf club comprising:

a head having a sole and also having an impact face with a single design loft;

a single straight hosel; and

a single straight shaft connected to the head via the hosel, the connection arranged so that the shaft forms a non-zero lean angle with the vertical when the head rests on its sole so that the impact face is positioned at its design loft, the head and hosel having been cast or forged at the time of manufacture to achieve the non-zero lean angle.

51. **(Previously presented)** An iron-type golf club comprising:

a head having a sole and also having an impact face with a single design loft;

a single straight hosel; and

a single straight shaft connected to the head via the hosel, the connection arranged so that the shaft forms a non-zero lean angle with the vertical when the head rests on its sole so that the impact face is positioned at its design loft, the non-zero lean angle being greater than 3 degrees.

52. **(Previously presented)** The iron-type golf club as defined in either of claims 51 or 54 wherein the lean angle is greater than 3 and less than 15 degrees, the head and hosel having been cast or forged at the time of manufacture to achieve the non-zero lean angle.

53. **(Previously presented)** An iron-type golf club comprising:

a head having a face with a single design loft and a sole;

a single straight hosel; and

a single straight shaft connected to the head via the hosel, the connection arranged so that the shaft forms a non-zero lean angle, which non-zero lean angle is greater than 3 and less than 10 degrees, with the vertical when the head rests on its sole so that its face

achieves its design loft.

54. **(Previously presented)** An iron-type golf club comprising:

a head having a sole and an impact face with a single design loft;

a single straight hosel; and

a single straight shaft connected to the head via the hosel, the connection arranged so that the shaft forms a non-zero lean angle with the vertical when the head rests on its sole so that the impact face is positioned at its design loft, the center of mass of the golf club being in substantially the same location as at the time of manufacture.

55-58. **(Cancelled)**

59. **(Previously presented)** In combination, a golf club head for an iron-type golf club and a single, straight hosel, the golf club head having a face, a sole, and a single design loft, the golf club head and hosel being arranged and constructed so that if the golf club head were attached to a straight shaft at the hosel and the sole of the golf club head were positioned on a flat surface so that its face achieves the design loft with respect to a plane perpendicular to the flat surface, the angle drawn between the centerline of the shaft and a plane perpendicular to the flat surface is non-zero.

60. **(Previously presented)** An iron-type golf club comprising:

a golf club head having a face, a sole, and a single design loft;

a single straight hosel; and

a single straight shaft connected to the head via the hosel, the connection arranged so that if the head were positioned on a flat surface so that its face achieves the design loft with respect to the perpendicular, the shaft would not be perpendicular to the flat surface.

61. **(Previously presented)** A wedge-type golf club comprising a head and a shaft connected to the head with a non-zero lean angle, so that if the head were positioned on a flat surface in a manner that caused its face to achieve its design loft with respect to the

perpendicular, the shaft would not be perpendicular to the flat surface.

62. **(Previously presented)** A wedge-type golf club manufactured by a method comprising steps of:

selecting a wedge head having a predetermined design characteristics including design loft and bounce angle; and

attaching a shaft to the wedge head at a non-zero lean angle, so that if the head were positioned on a flat surface in a manner that caused its face to achieve its design loft with respect to the perpendicular, the shaft would not be perpendicular to the flat surface.

63. **(Previously presented)** The wedge-type golf club of either one of claims 61 or 62, wherein the non-zero lean angle is greater than about 3 degrees.

64. **(Previously presented)** The iron-type golf club of any one of claims 51, 52, 54 or 60, wherein the golf club is a wedge-type club.

65. **(Previously presented)** The combination of claim 59, wherein the golf club head is a wedge-type head.

66. **(Previously presented)** An iron-type golf club comprising:

a head having a face and a sole;

a single straight hosel; and

a single straight shaft connected to the head via the hosel, the connection arranged so that the shaft forms a non-zero lean angle, which non-zero lean angle is greater than 3 and less than 10 degrees, with the vertical when the head rests on its sole, the center of mass of the golf club being in substantially the same location as at the time of manufacture.

67. **(Previously presented)** The iron-type golf club of any one of claims 50, 51, 53, 54, 60 or 66, wherein the connection occurs at an end of the head adjacent the face.

68. **(Previously presented)** The combination of claim 59 wherein the hosel attaches to the

head at an end adjacent the face.

69. **(Previously presented)** The wedge-type golf club of either one of claims 61 or 62, wherein the head and shaft are connected at an end of the head adjacent its face.

Claims Pending after Entrance of Amendment

1-49. **(Cancelled)**

50. **(Previously presented)** An iron-type golf club comprising:

a head having a sole and also having an impact face with a single design loft;

a single straight hosel; and

a single straight shaft connected to the head via the hosel, the connection arranged so that the shaft forms a non-zero lean angle with the vertical when the head rests on its sole so that the impact face is positioned at its design loft, the head and hosel having been cast or forged at the time of manufacture to achieve the non-zero lean angle.

51. **(Previously presented)** An iron-type golf club comprising:

a head having a sole and also having an impact face with a single design loft;

a single straight hosel; and

a single straight shaft connected to the head via the hosel, the connection arranged so that the shaft forms a non-zero lean angle with the vertical when the head rests on its sole so that the impact face is positioned at its design loft, the non-zero lean angle being greater than 3 degrees.

52. **(Previously presented)** The iron-type golf club as defined in either of claims 51 or 54 wherein the lean angle is greater than 3 and less than 15 degrees, the head and hosel having been cast or forged at the time of manufacture to achieve the non-zero lean angle.

53. **(Previously presented)** An iron-type golf club comprising:

a head having a face with a single design loft and a sole;

a single straight hosel; and

a single straight shaft connected to the head via the hosel, the connection arranged so that the shaft forms a non-zero lean angle, which non-zero lean angle is greater than 3 and less than 10 degrees, with the vertical when the head rests on its sole so that its face achieves its design loft.

54. **(Previously presented)** An iron-type golf club comprising:

a head having a sole and an impact face with a single design loft;

a single straight hosel; and

a single straight shaft connected to the head via the hosel, the connection arranged so that the shaft forms a non-zero lean angle with the vertical when the head rests on its sole so that the impact face is positioned at its design loft, the center of mass of the golf club being in substantially the same location as at the time of manufacture.

55-58. **(Cancelled)**

59. **(Previously presented)** In combination, a golf club head for an iron-type golf club and a single, straight hosel, the golf club head having a face, a sole, and a single design loft, the golf club head and hosel being arranged and constructed so that if the golf club head were attached to a straight shaft at the hosel and the sole of the golf club head were positioned on a flat surface so that its face achieves the design loft with respect to a plane perpendicular to the flat surface, the angle drawn between the centerline of the shaft and a plane perpendicular to the flat surface is non-zero.

60. **(Previously presented)** An iron-type golf club comprising:

a golf club head having a face, a sole, and a single design loft;

a single straight hosel; and

a single straight shaft connected to the head via the hosel, the connection arranged so that if the head were positioned on a flat surface so that its face achieves the design loft with respect to the perpendicular, the shaft would not be perpendicular to the flat surface.

61. **(Currently amended)** A wedge-type golf club comprising:

a head having a sole and an impact face with a single design loft; and

a shaft connected to the head with a non-zero lean angle, so that if the head were positioned on a flat surface in a manner that caused its impact face to achieve its design loft with respect to the perpendicular, the shaft would not be perpendicular to the flat

surface.

62. **(Currently amended)** A wedge-type golf club manufactured by a method comprising steps of:

selecting a wedge head having a predetermined design characteristics including a single design loft and a bounce angle; and

attaching a shaft to the wedge head at a non-zero lean angle, so that if the head were positioned on a flat surface in a manner that caused its face to achieve its design loft with respect to the perpendicular, the shaft would not be perpendicular to the flat surface.

63. **(Previously presented)** The wedge-type golf club of either one of claims 61 or 62, wherein the non-zero lean angle is greater than about 3 degrees.

64. **(Currently amended)** The iron-type golf club of any one of claims 51, 54 or 60, wherein the golf club is a wedge-type club.

65. **(Previously presented)** The combination of claim 59, wherein the golf club head is a wedge-type head.

66. **(Currently amended)** An iron-type golf club comprising:

a head having a face, a sole and a single design loft;

a single straight hosel; and

a single straight shaft connected to the head via the hosel, the connection arranged so that the shaft forms a non-zero lean angle, which non-zero lean angle is greater than 3 and less than 10 degrees, with the vertical when the head rests on its sole, the center of mass of the golf club being in substantially the same location as at the time of manufacture.

67. **(Previously presented)** The iron-type golf club of any one of claims 50, 51, 53, 54, 60 or 66, wherein the connection occurs at an end of the head adjacent the face.

68. **(Previously presented)** The combination of claim 59 wherein the hosel attaches to the head at an end adjacent the face.

69. **(Previously presented)** The wedge-type golf club of either one of claims 61 or 62, wherein the head and shaft are connected at an end of the head adjacent its face.

COPY

ATTORNEY DOCKET NO.: 2002832-0002

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Sosin	Examiner:	S. Blau
Serial No.:	09/248,515	Art Unit:	3711
Filing Date:	February 8, 1999		
Title:	GOLF CLUB AND METHOD OF DESIGN		

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

TRANSMITTAL LETTER

Enclosed are the following documents:

1. Petition for Extension of Time Under 37 C.F.R. §1.136 (1 page);
2. Response to Office Action Under 37 C.F.R. §1.116 (12 pages);
3. Exhibits (9 pages);
4. Declaration Under 37 C.F.R. §1.132 (2 pages);
5. Check in the amount of $55.00; and
6. Return Postcard.

If any additional fees are required to be paid or if any overpayment has been made, please charge or credit same to Deposit Account No. 03-1721.

Respectfully submitted,

Brenda Herschbach Jarrell, Ph.D.
Reg. No. 39,223

Patent Department
CHOATE, HALL & STEWART
Exchange Place
53 State Street
Boston, MA 02109
(617) 248-5000
Dated: 3/1/04

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Date

Signature

Sandra Sliger
Typed or Printed Name of person signing certificate

COPY

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Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PETITION FOR EXTENSION OF TIME UNDER 37 C.F.R. §1.136

A one (1) month extension of time, from February 14, 2004 to March 14, 2004 is requested to respond to the Final Office Action mailed November 14, 2003 in the above-referenced case. A check in the amount of $55.00 is enclosed in view of the small entity status of the application.

Please charge any additional fees or credit any overpayments that may be required to our Deposit Account No. 03-1721.

Respectfully submitted,

Brenda Herschbach Jarrell, Ph.D.
Registration No. 39,223

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3-3-04
Date

Signature

Sandra Sliger
Typed or Printed Name of person signing certificate

EXPEDITED PROCESSING
UNDER 37 CFR § 1.116

ATTORNEY DOCKET NO.: 2002832-0002

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Sosin	Examiner:	S. Blau
Serial No.:	09/248,515	Art Unit:	3711
Filing Date:	February 8, 1999		
Title:	GOLF CLUB AND METHOD OF DESIGN		

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

RESPONSE TO OFFICE ACTION UNDER 37 C.F.R. § 1.116

Applicant respectfully requests a one-month extension of time, from February 14, 2004 to March 14, 2004, to respond to the Final Office Action mailed November 14, 2003 in the above-referenced case. Responsive to that Final Office Action, Applicant respectfully requests entrance of the following Amendment and consideration of the following Remarks.

Please amend the above-identified application as follows:

The claims have not been amended with this Response; a **Listing of Claims** begins on page 2 of this Response.

Remarks begin on page 5 of this Response.

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3-3-04 — Date

Signature

Sandra Sliger

Typed or Printed Name of person signing certificate

LISTING OF CLAIMS

50. **(Previously presented)** An iron-type golf club comprising:

a head having a sole and also having an impact face with a single design loft;

a single straight hosel; and

a single straight shaft connected to the head via the hosel, the connection arranged so that the shaft forms a non-zero lean angle with the vertical when the head rests on its sole so that the impact face is positioned at its design loft, the head and hosel having been cast or forged at the time of manufacture to achieve the non-zero lean angle.

51. **(Previously presented)** An iron-type golf club comprising:

a head having a sole and also having an impact face with a single design loft;

a single straight hosel; and

a single straight shaft connected to the head via the hosel, the connection arranged so that the shaft forms a non-zero lean angle with the vertical when the head rests on its sole so that the impact face is positioned at its design loft, the non-zero lean angle being greater than 3 degrees.

52. **(Previously presented)** The iron-type golf club as defined in either of claims 51 or 54 wherein the lean angle is greater than 3 and less than 15 degrees, the head and hosel having been cast or forged at the time of manufacture to achieve the non-zero lean angle.

53. **(Previously presented)** An iron-type golf club comprising:

a head having a face with a single design loft and a sole;

a single straight hosel; and

a single straight shaft connected to the head via the hosel, the connection arranged so that the shaft forms a non-zero lean angle, which non-zero lean angle is greater than 3 and less than 10 degrees, with the vertical when the head rests on its sole so that its face achieves its design loft.

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a single straight shaft connected to the head via the hosel, the connection arranged so that the shaft forms a non-zero lean angle with the vertical when the head rests on its sole so that the impact face is positioned at its design loft, the center of mass of the golf club being in substantially the same location as at the time of manufacture.

59. **(Previously presented)** In combination, a golf club head for an iron-type golf club and a single, straight hosel, the golf club head having a face, a sole, and a single design loft, the golf club head and hosel being arranged and constructed so that if the golf club head were attached to a straight shaft at the hosel and the sole of the golf club head were positioned on a flat surface so that its face achieves the design loft with respect to a plane perpendicular to the flat surface, the angle drawn between the centerline of the shaft and a plane perpendicular to the flat surface is non-zero.

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a single straight shaft connected to the head via the hosel, the connection arranged so that if the head were positioned on a flat surface so that its face achieves the design loft with respect to the perpendicular, the shaft would not be perpendicular to the flat surface.

61. **(Previously presented)** A wedge-type golf club comprising a head and a shaft connected to the head with a non-zero lean angle, so that if the head were positioned on a flat surface in a manner that caused its face to achieve its design loft with respect to the perpendicular, the shaft would not be perpendicular to the flat surface.

62. **(Previously presented)** A wedge-type golf club manufactured by a method comprising steps of:

selecting a wedge head having a predetermined design characteristics including design loft and bounce angle; and

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67. **(Previously presented)** The iron-type golf club of any one of claims 50, 51, 53, 54, 60 or 66, wherein the connection occurs at an end of the head adjacent the face.

68. **(Previously presented)** The combination of claim 59 wherein the hosel attaches to the head at an end adjacent the face.

69. **(Previously presented)** The wedge-type golf club of either one of claims 61 or 62, wherein the head and shaft are connected at an end of the head adjacent its face.

REMARKS

Applicant respectfully submits that the rejections made in the Office Action mailed on November 14, 2003 in the above-referenced case represent a dramatic and troubling example of hindsight reconstruction. This case has been with the Examiner now for almost five years. Perhaps in that time the inventive features have become familiar to him. They remain new to the art, however, as demonstrated by the Examiner's inability to find a single reference that *teaches or suggests* the claimed golf clubs with lean angles.

Over seven Office Actions, including citations of 22 references (in addition to the 28 cited by Applicant), two personal and one telephonic interviews, and two Declarations from experienced golf manufacturers, the Examiner has identified no references or prior art documents evidencing that anyone had ever contemplated a golf club containing a lean angle as recited in the present claims. Instead, the Examiner has turned up plenty of references (e.g., Antonius '662, Solheim, etc.) that, consistent with the general golfing knowledge, *teach away* from the claimed lean angle clubs.

The Examiner has worked very hard to find evidence of the claimed invention in the prior art, scrounging up truly bizarre devices (e.g., double shafted training clubs [Izett], clubs with serpentine shafts [Knox], clubs to which the shaft is mounted on the rear face of the head [MacDonald], a wedge with a tri-level sole [Adams]) that in fact do not represent the claimed invention but could have been construed, if effort were applied, to have fallen within the language of some of the earlier versions of the claims. The Examiner has finally resorted to scouring the literature for any picture of a golf club that could be construed to have a non-zero lean angle.

None of the references now cited by the Examiner mentions a lean angle, or the desirability of such. Each reference contains many pictures of the intended club heads; most depict only a tiny portion of a shaft, and do not discuss the shaft or shaft-head connection, at all. In some such pictures, the Examiner sees a lean angle, though there is no indication in the supporting text that the cited picture is intended to depict a club any different from those in the other pictures. Even in responding to Applicant's comments, the Examiner offers no *evidence* that the prior art disclosures intended to represent a golf club with a lean angle.

After understanding and considering the features and advantages of the claimed golf clubs, the Examiner has returned to the literature time and time again to try to find evidence of

prior development. There is none. The references relied on by the Examiner simply do not teach what he cites them for. Furthermore, the Examiner has substituted his own opinion for the documented views of two different experienced golf club manufacturers.

The presently claimed golf clubs are novel and non-obvious. The claims are fully supported by the specification. The patent should issue.

Each of the levied rejections is discussed individually in detail below.

Thompson (alone or in view of Scheie)

This rejection is unchanged from the prior Office Action. The Examiner points to Fig. 2 of Thompson as depicting an iron-type club whose shaft forms a non-zero lean angle with the vertical when the head rests on its sole with its impact face positioned at its design loft. Applicant respectfully disagrees.

Thompson has five Figures, all of the same golf club head. The inventive features of this head, as described by Thompson, are its downwardly tapered keel and weight-receiving passage(s) between the keel and a hollow in the rear side of the head. Fig. 2 is said to be a toe end elevation of the head (Drawing Description, column 1, line 68). Other than this characterization, there is no specific description of Fig. 2 in Thompson. Furthermore, there is no discussion relating to *any* of the Figures that addresses the shaft/head connection. All we know is that the iron that is depicted "is intended to represent a wedge" (column 2, lines 15-16). Thus, those of ordinary skill in the art would understand that, other than its keel and weighting features, the depicted club is a *standard wedge*. As Applicant has previously documented through Declaratory and other evidence, a standard wedge has a zero lean angle (see, for example, ¶ 4, 6 and 11 of the Declaration by Mr. John Hampford, President and CEO of Hoffman Forged Products, that was filed on November 15, 2001). This evidence establishes that the claimed golf clubs, containing a lean angle, are a *radical* departure from the standard.

To the extent that the actual picture presented in Fig. 2 could be viewed as having a lean angle (in hindsight after considering the present specification), those of ordinary skill in the art would have understood it to be merely an inaccurate representation of a standard club. There is no indication in Fig. 2, or anywhere else in Thompson, that the Figures are drawn to scale, or with angular precision. It is well established that unexplained features of a drawing must be evaluated for what they *reasonably* disclose and suggest to one of ordinary skill in the art. *In re*

Aslanian, 590 F.2d 911, 200 USPQ 500 (CCPA 1979). Fig. 2 of Thompson would not reasonably disclose the claimed golf clubs to a person of ordinary skill in the art. In support of this position, Applicant has enclosed a Declaration under 37 CFR 1.132 by J. Rodney Loesch, Director of Golf at the Connecticut Golf Club, President of the Metropolitan PGA, and person of at least ordinary skill in the art. Mr. Loesch has reviewed the present specification and the Thompson reference, and concludes that Figure 2 of Thomspon is not intended to be an accurate scaled drawing, and does not teach a club with a lean angle. The rejections over Thompson should be removed.

Scheie et al., like Thompson, describes golf club heads whose unusual feature is their weighting; other aspects of the heads and clubs that incorporate them are standard. Thus no combination of Thompson with Scheie et al. could render obvious the present claims; this rejection should also be removed.

The Examiner has maintained his rejections over Thompson (and Scheie) by stating "the more the Examiner searches the more woods/irons are found with lean angles". The evidence offered in support of this statement is "see the *conclusion below* as well as previous cited art". Applicant finds these comments remarkable. The previous cited art did not teach lean-angle containing clubs as recited in the claims. If it had, the Examiner would not have had to keep searching. Thus, the only *evidence* provided that Thompson describes a lean-angle containing golf club is the Examiner's *conclusion* that it does.

For those claims (50 and 52) that relate to forged or cast clubs, the Examiner has included Scheie, which is relied upon for teaching forging or casting of a head. A reference to Scheie for forging or casting of a head is not necessary, as forging and casting were certainly known in the art. In fact, the reference to forging and casting in Scheie is one to "conventional investment casting and forging techniques" (Scheie column 4, lines 1-2). Scheie describes a club head with a cavity designed to achieve particular weighting characteristics. There is no discussion of the connection between head and shaft. In fact, no shaft is depicted anywhere in Scheie! A combination of Thompson and Scheie would yield a golf club with a very bizarre head, but a standard connection between head and shaft. No such combination could render obvious the presently claimed invention.

<u>Ahn (in view of Hirose and Scheie or Hirose, Scheie, and Adams)</u>

This rejection is new to the Final Office Action. In the prior Office Action, the Examiner had cited but not relied upon Ahn.

Ahn describes golf clubs that include a means for increasing, decreasing or adjusting the position and amount of weights in a golf club head (e.g., see Abstract). Ahn does not discuss the design loft or bounce of the golf club heads, nor does Ahn discuss the concepts of effective loft and lean angle. There is no teaching or suggestion in Ahn of the claimed golf clubs. The inventive feature of Ahn is the adjustable weight of the golf club heads; those of ordinary skill in the art would understand other aspects of the depicted clubs to be conventional. As discussed above, Applicant has already established that a lean angle represents a *radical* departure from the conventional (both at the time Ahn was filed and today). There is no discussion in Ahn of the desirability of a lean angle, but the Examiner purports to find one in Fig. 5. No dimensions are given in Fig. 5, the ground is not indicated, and only a tiny piece of shaft is shown. Applicant has previously argued that, to the extent that Fig. 5 (or any other Fig. in Ahn) could be construed to depict a club with a lean angle, it is merely because the Figure is an inaccurate rendering of a standard club. The Examiner has disagreed.

For purposes of argument, Applicant has assumed that the Examiner is correct that Fig. 5 of Ahn was intended to be an accurate, scaled drawing. As shown in the attached Appendix, Applicant has attempted to define a reasonable ground line and its perpendicular in order to calculate any depicted "lean angle". According to these calculations, the indicated "lean angle" would be 15°. Applicant has performed a similar analysis for Figs, 2, 9, and 12, and has calculated "lean angles" of 14°, 12°, and 15° respectively. Even if the Examiner were correct, therefore, and Ahn did intend to depict a lean angle, it would be outside the scope of the claimed lean angle recited, for example, in claims 53 or 66. Moreover, as discussed more fully below, similar analyses of the other references pointed to by the Examiner make perfectly clear that Ahn, like the other references (all of which describe some novel aspect of a golf club *head*), does not intend to accurately represent the head/shaft connection.

In the last Office Action, the Examiner referred to Ahn together with Solheim (specifically Fig. 6 of Solheim). The Examiner has dropped the reference to Solheim in the Final Office Action, and it is a telling omission. As Applicant has previously discussed, Solheim, like many other prior art references, teaches explicitly that the club of Fig. 6 (or Fig. 3 or 5) has a zero lean angle. Indeed, the lean angle is the angle measured between the shaft and the vertical

when the head rests on its sole so that its face achieves its design loft. Figs. 3, 5 and 6 of Solheim show a club that has a vertical shaft (i.e., zero lean angle) when the head rests on its sole so that its face achieves its design loft (the design loft is labeled angle "A" in Figs. 3, 5 and 6, see lines 24-26, column 3). Thus, Solheim is another example of the understanding, well established in the art prior to the present invention, that clubs should be forged with a zero lean angle.

The Examiner has replaced the Solheim reference with reference to Hirose. Hirose is relied upon as showing an iron club having a single straight shaft, which it does. The single straight shaft of Hirose is connected to the head of the club with no lean angle. There is no combination of Ahn and Hirose that could render obvious the presently claimed invention. In fact, even assuming that a person of ordinary skill in the art would read Ahn to teach a golf club containing a lean angle, Applicant respectfully submits that such a person, wishing to manufacture a golf club based on the teachings of Ahn and Hirose, would be much more likely to select the standard, no-lean-angle connection of Hirose rather than the 15° "lean angle" of Ahn.

Scheie has been discussed above and adds nothing to any combination of Ahn and Hirose that could render obvious the claimed invention.

Adams (in view of Hirose)

This rejection is also unchanged from the prior Office Action. The Examiner points to Figs. 3-5 of Adams as depicting an iron-type club whose shaft forms a non-zero lean angle with the vertical when the head rests on its sole with its impact face positioned at its design loft. Applicant respectfully disagrees. The heads of the presently claimed golf clubs have a single design loft which is in stark contrast with the clubs of Adams (see Figs. 3-5). The golf clubs of Adams are designed to overcome the limitations of golf clubs with single design lofts and Adams even explicitly *teaches away* from such golf clubs (see, column 1, lines 29-40):

> "Normally the sole or bottom surface of a golf club is designed to lie flat on the ground surface to position the club face at a predetermined face loft angle. A golfer may manipulate the club face of a particular lofted club to alter the loft face angle, however this results in the sole of the club head being angled, that is not flat, with respect to the ground surface. To enable a golf club to be used for a number of different loft angles, golf clubs with multiple uses have been developed having a plurality of ground engaging surfaces, each with different angular configurations whereby a single golf club may

functionally take the place of two or more golf clubs with different lofts."

Hirose is relied on to teach a limitation that is only present in a dependent claim (single straight shaft) and does not remedy the deficiencies of Adams. Scheie is also relied on to teach a limitation that is only present in a dependent claim (the head and hosel being forged or cast) and does not remedy the deficiencies of Adams. Withdrawal of the rejection is respectfully requested.

In the Final Office Action, the Examiner does not respond to Applicant's prior comments with respect to Adams.

Prior Art Made of Record and Not Relied On

As with the last Office Action, the Examiner cites to certain art that is not relied upon, but that is considered pertinent. Applicant submits that this art further demonstrates the novelty and nonobviousness of the present invention.

For instance, the Examiner points to Fig. 1B of D'Amico as showing "an iron club being used with a lean angle". Of course, a standard iron club cannot be "used with a lean angle" because the "lean angle" refers to the forged angle between the shaft and the head. D'Amico shows a golfer using a standard club in a swing that de-lofts the club. Prior to the present invention, this strategy was common. In fact, one aspect of the present invention was the recognition of the disadvantages of using such an angled swing with a standard club. For example, as illustrated in Figs. 3-5 of the present specification and discussed at page 9, line 21-page 11, line 6, it is common for golfers to tilt (and de-loft) an existing club for a particular shot. However, as taught by the present invention, such tilting deprives the golfer of the benefits of other features of the golf club head. The presently claimed clubs differ from standard clubs in the attachment of the shaft to the head at a non-zero lean angle. For example, where Fig 7a of the present specification could represent a standard club, Figs. 7b and 7c represent inventive clubs. They are patentably distinct.

In addition to D'Amico, the Examiner points to a reference by Blough and five by Antonious. According to the Examiner, each of these references includes at least one Figure depicting a club with a lean angle as recited in the present claims. The Examiner is mistaken. Like Thompson and Ahn, each of these references discusses a novel feature of a club head.

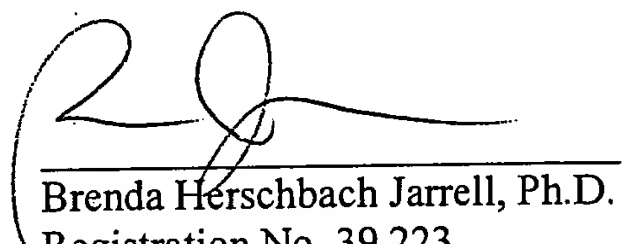
None mentions a shaft, or anything about the shaft/head connection. None depicts more than a minimal shaft component. Each is concerned with discussing and illustrating only the relevant feature of the club head. None intends to provide an accurate, scaled depiction of any other aspect of a golf club. Applicant has attempted to calculate a lean angle for each of the Figures pointed out by the Examiner. Of course, as no ground line is indicated, and no design loft is designated for any head, Applicant has had to make a "best guess". The results of these calculations make abundantly clear that the authors were not intending to provide accurate representations. For example, Fig. 3 of Blough, if taken as an accurate, scaled representation, would show a club with a 30° "lean angle"! Applicant respectfully submits that it strains credibility to assert that a 30° lean angle was intended literally. Comparably, Fig. 3 of the Antonious '386 patent would show a 25° "lean angle"! None of the other Figures, even if taken literally, would show a "lean angle" within the range of 3-10°. Moreover, most are so large as to be clearly not intended as literal representations. Notwithstanding the Examiner's personal opinion, the prior art does not in fact teach or suggest the claimed golf clubs having a lean angle.

COPY

CONCLUSION

Based on the arguments presented above, it is submitted that the pending claims, as amended herein, are allowable over the art of record. A Notice to that effect is respectfully requested. It is not believed that extensions of time or fees for net addition of claims are required, beyond those which may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required for consideration of this paper (including fees for net addition of claims) are authorized to be charged to our Deposit Account No. 03-1721.

Respectfully submitted,



Brenda Herschbach Jarrell, Ph.D.
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Boston, MA 02109
(617) 248-5000

Dated: 2/25/2004

3585239_1.DOC

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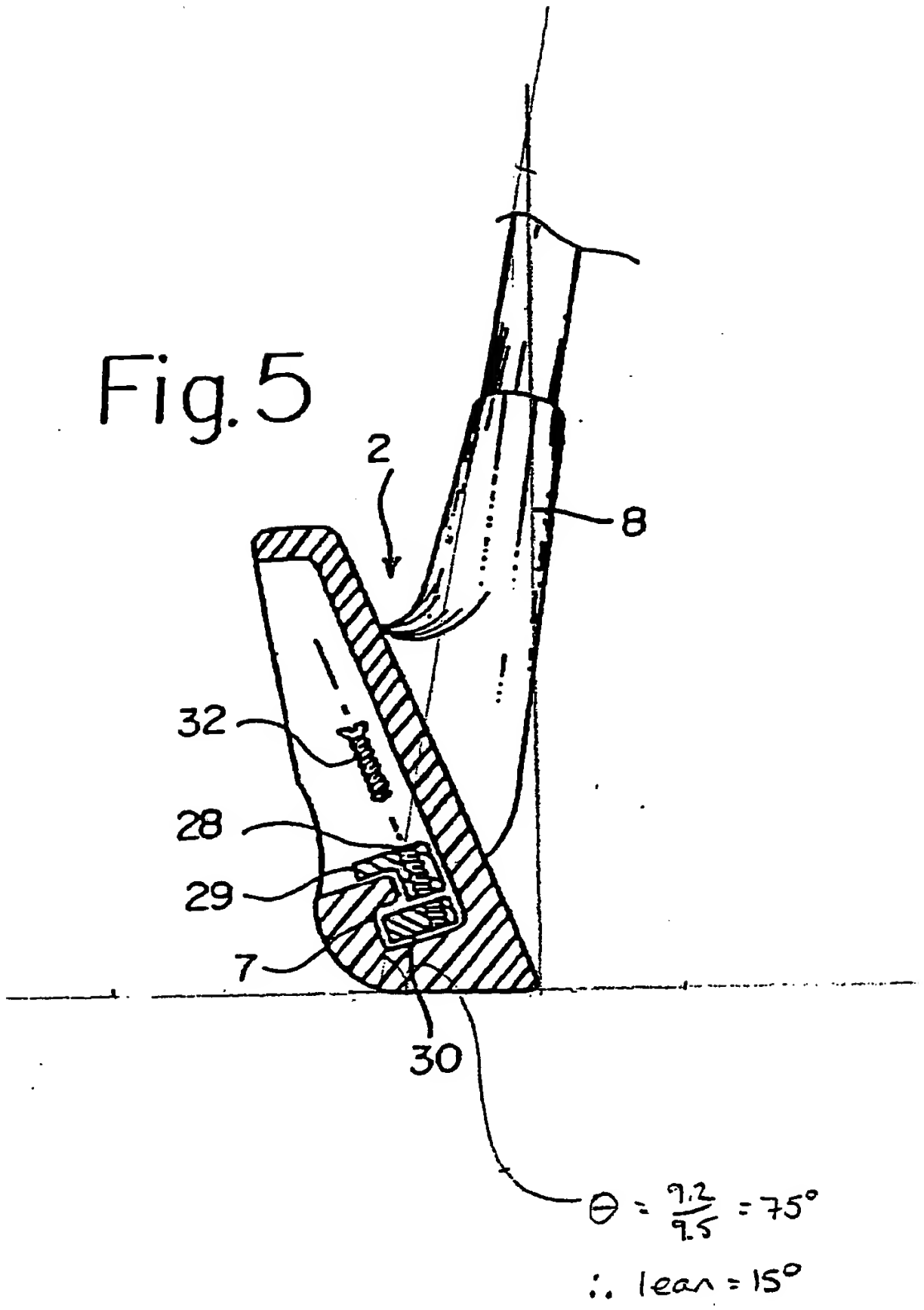
Fig. 5



$\theta = \frac{9.2}{9.5} = 75°$

$\therefore$ lean $= 15°$

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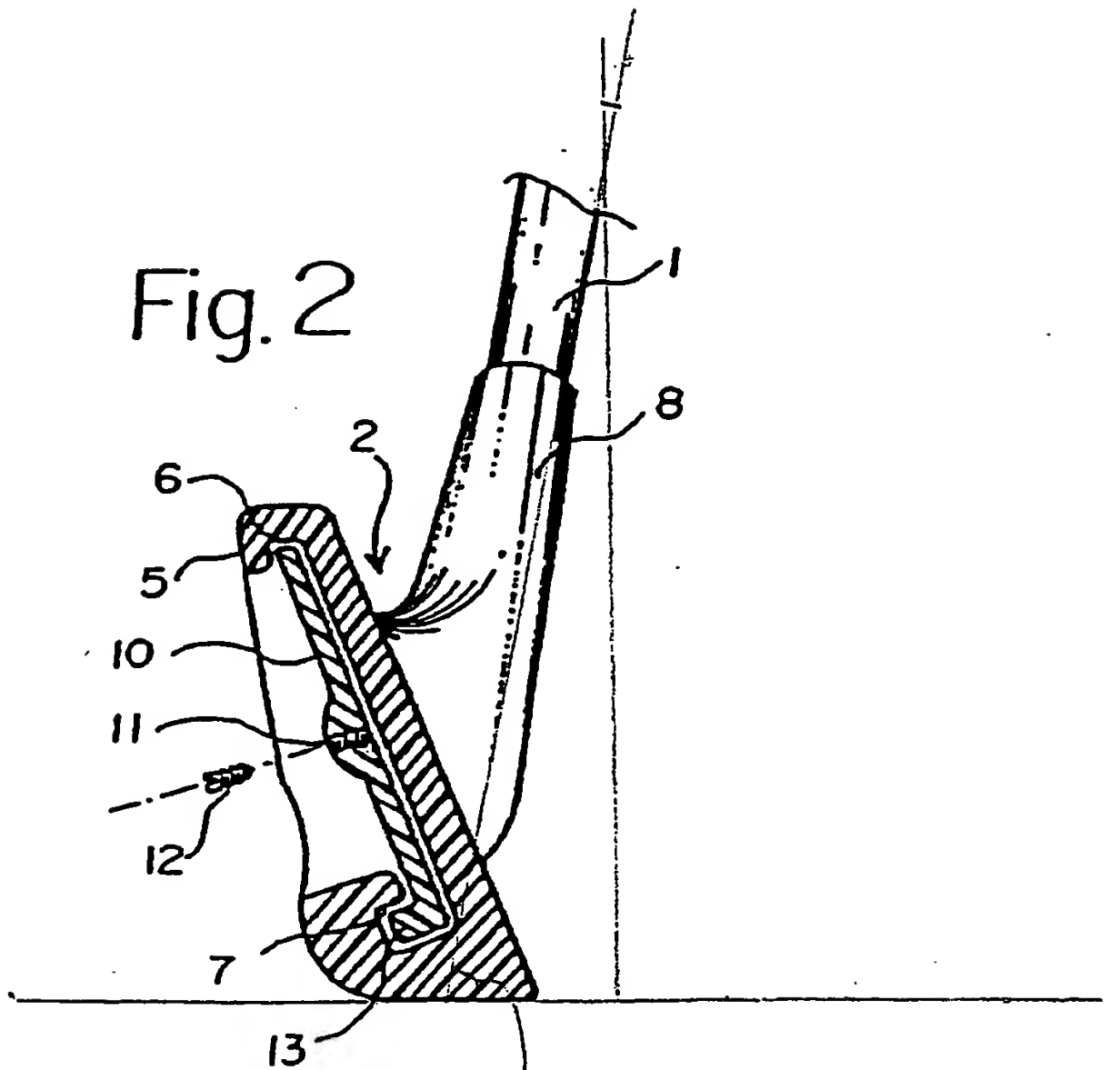
Fig. 2



$\theta = \sin^{-1} \frac{7.4}{76} = 76°$

$\therefore$ lean $= 14°$

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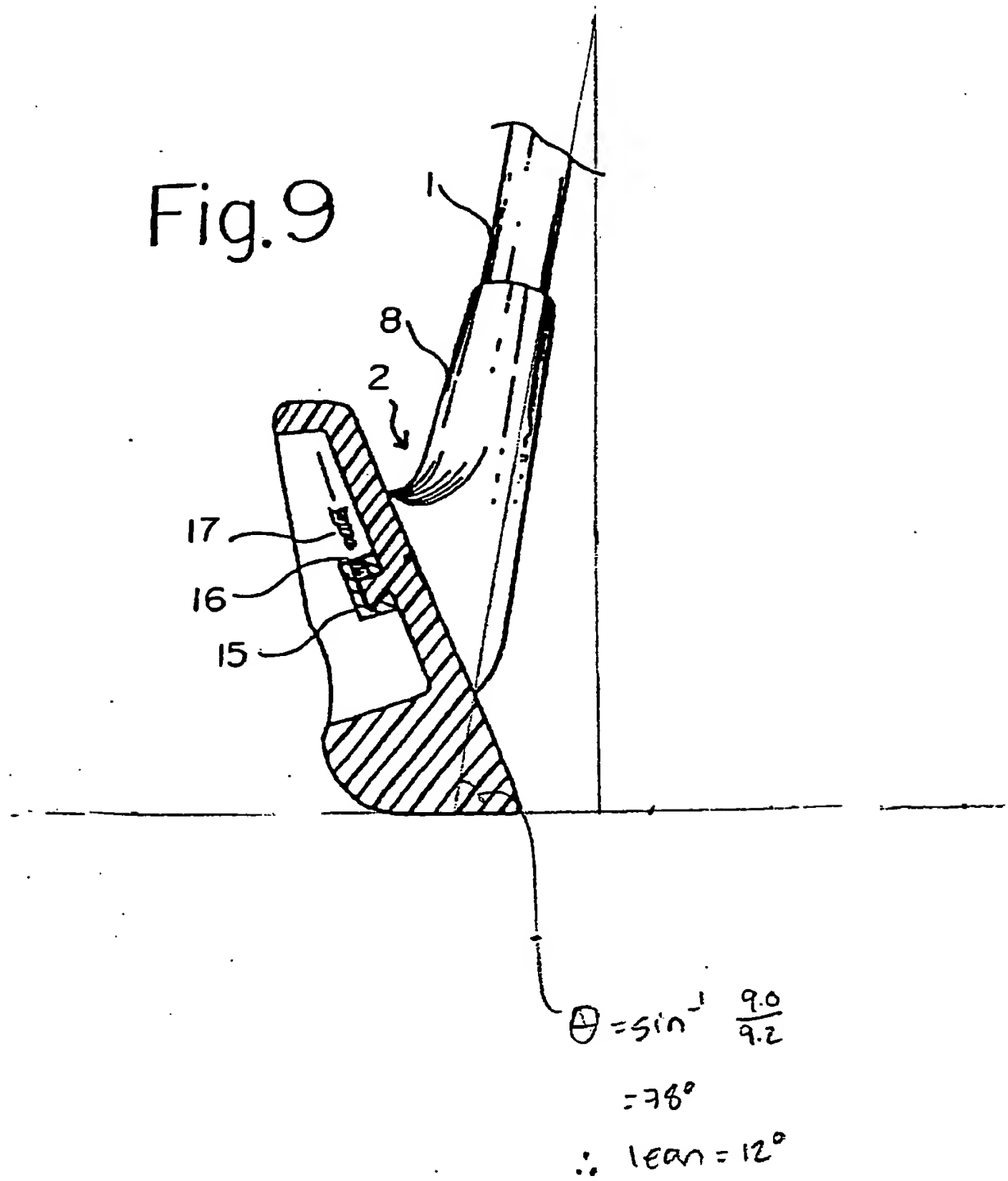
Fig.9



$\theta = \sin^{-1} \frac{9.0}{9.2}$

$= 78°$

$\therefore$ lean $= 12°$

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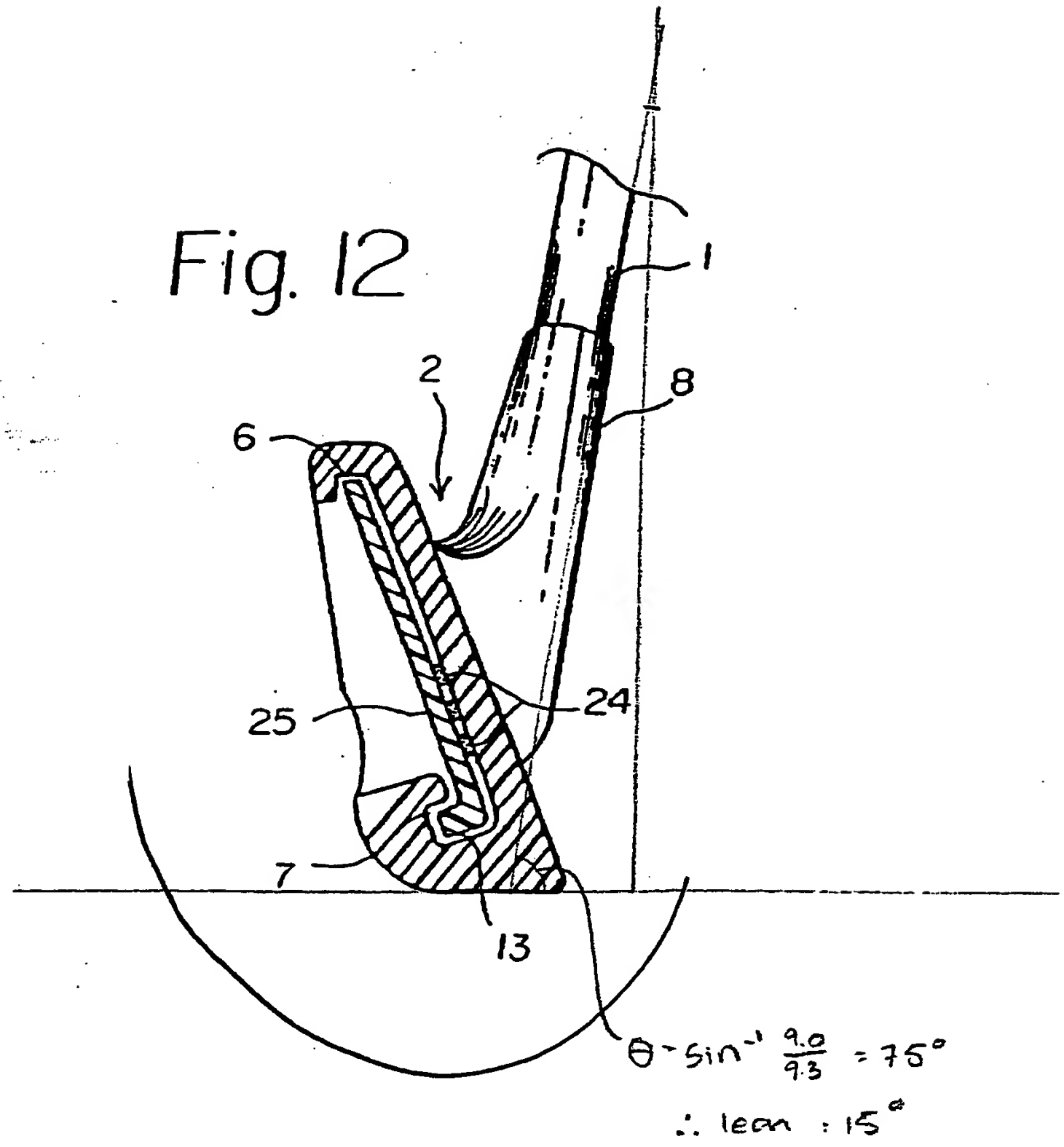
Fig. 12



$\theta = \sin^{-1}\frac{9.0}{9.3} = 75°$

$\therefore$ lean $= 15°$

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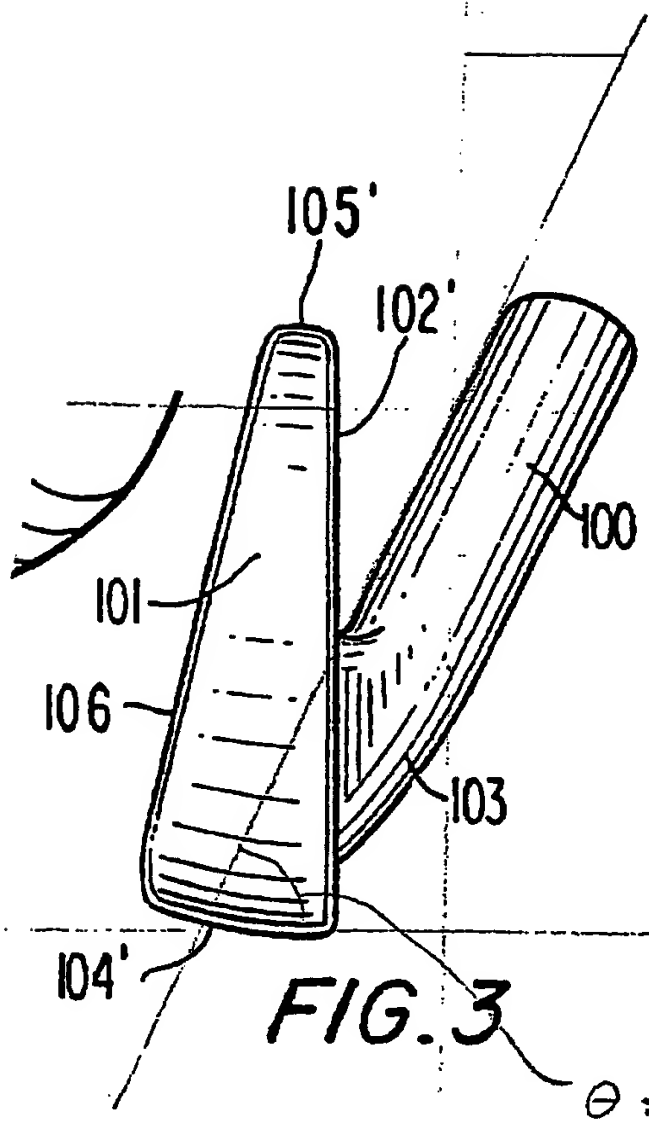


FIG. 3

$\theta = \sin^{-1}\frac{4.2}{4.85} = \sin^{-1}0.8$

$= 60°$

$\therefore$ lean $= 30°$

FIG. 3.

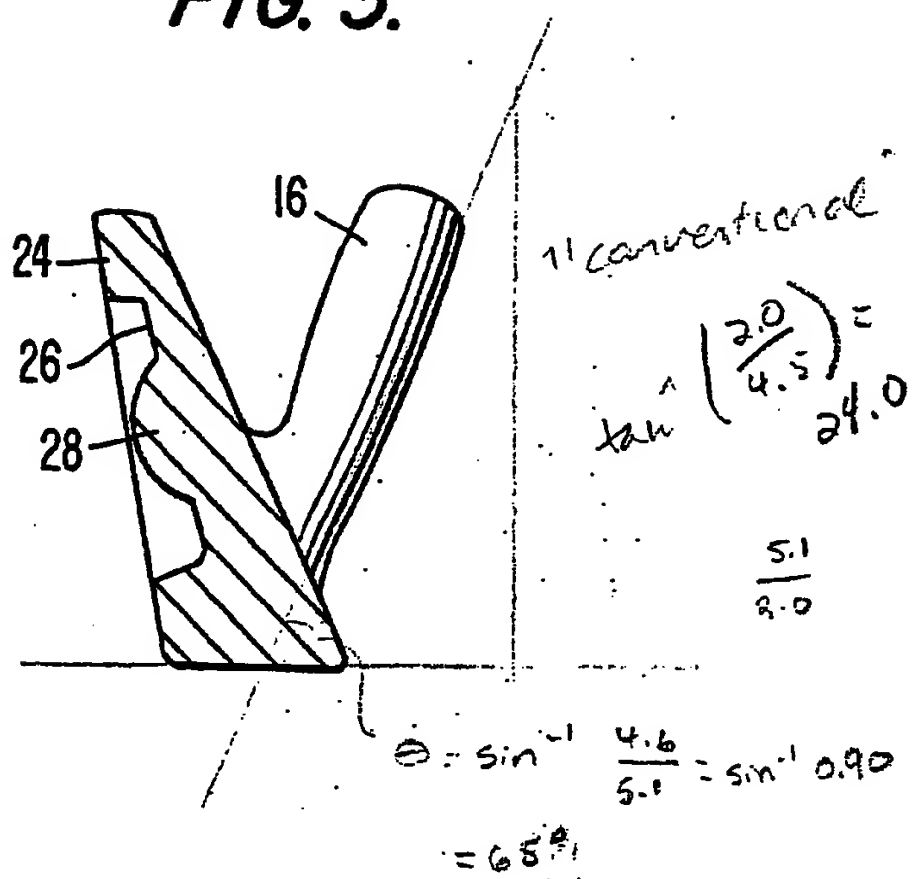


FIG. 5.

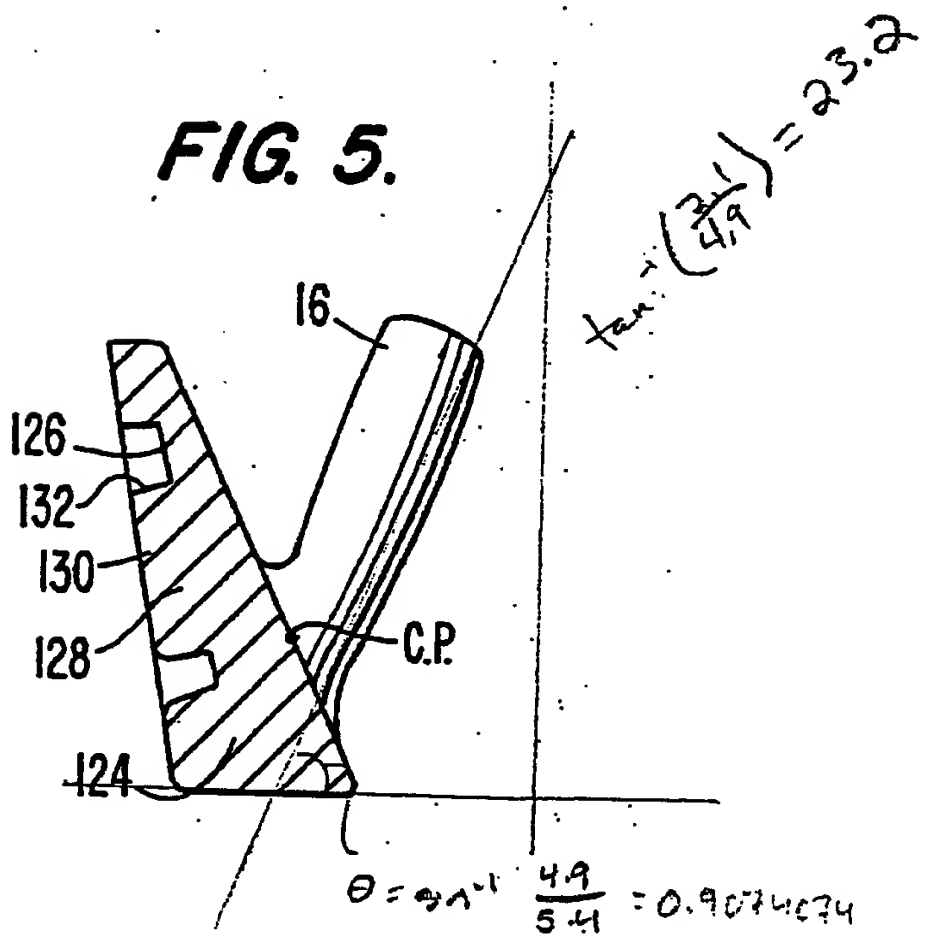
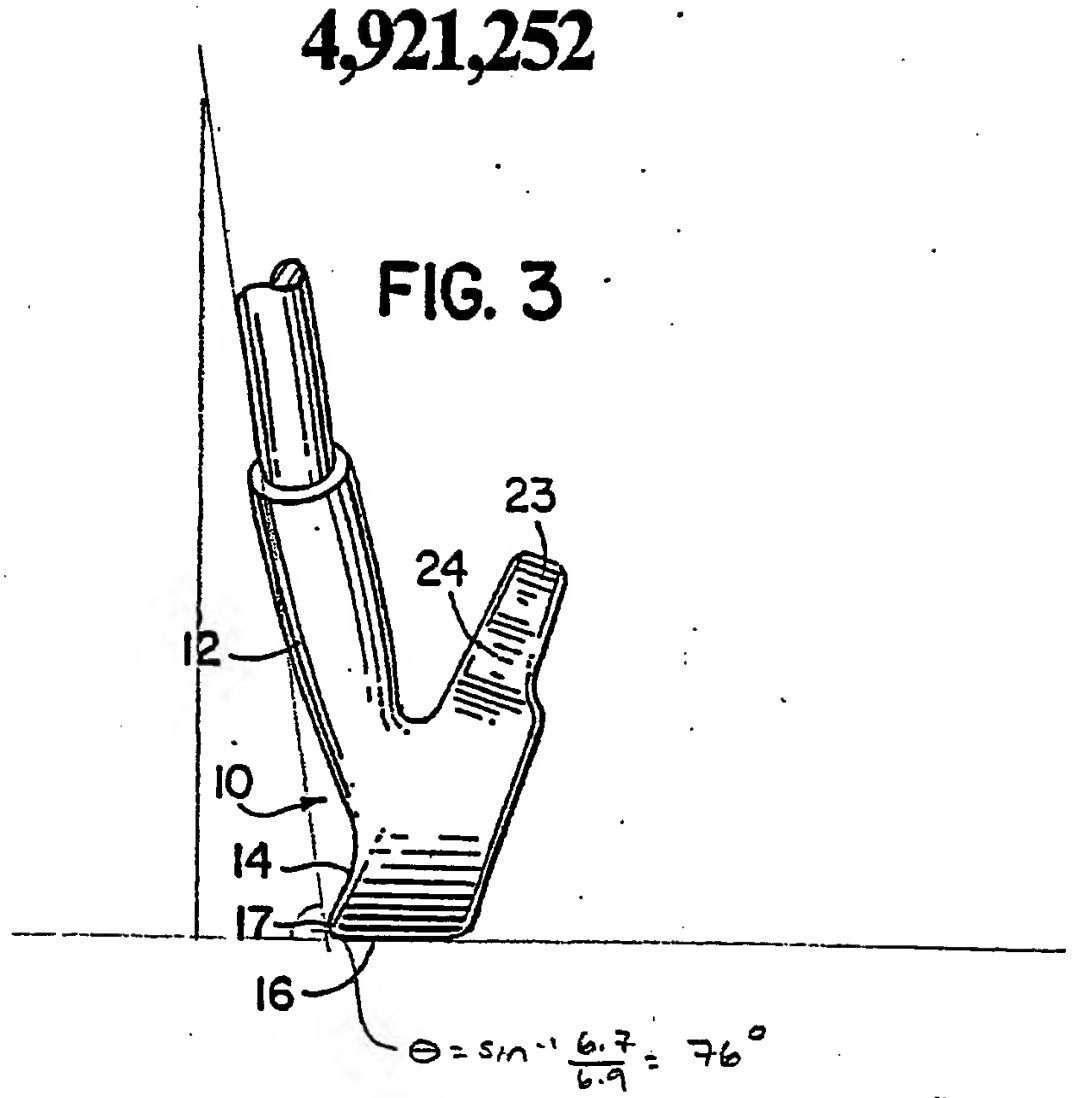


FIG. 3



$\theta = \sin^{-1}\frac{6.7}{6.9} = 76°$

$\therefore$ lean = 14°

FIG. 14A

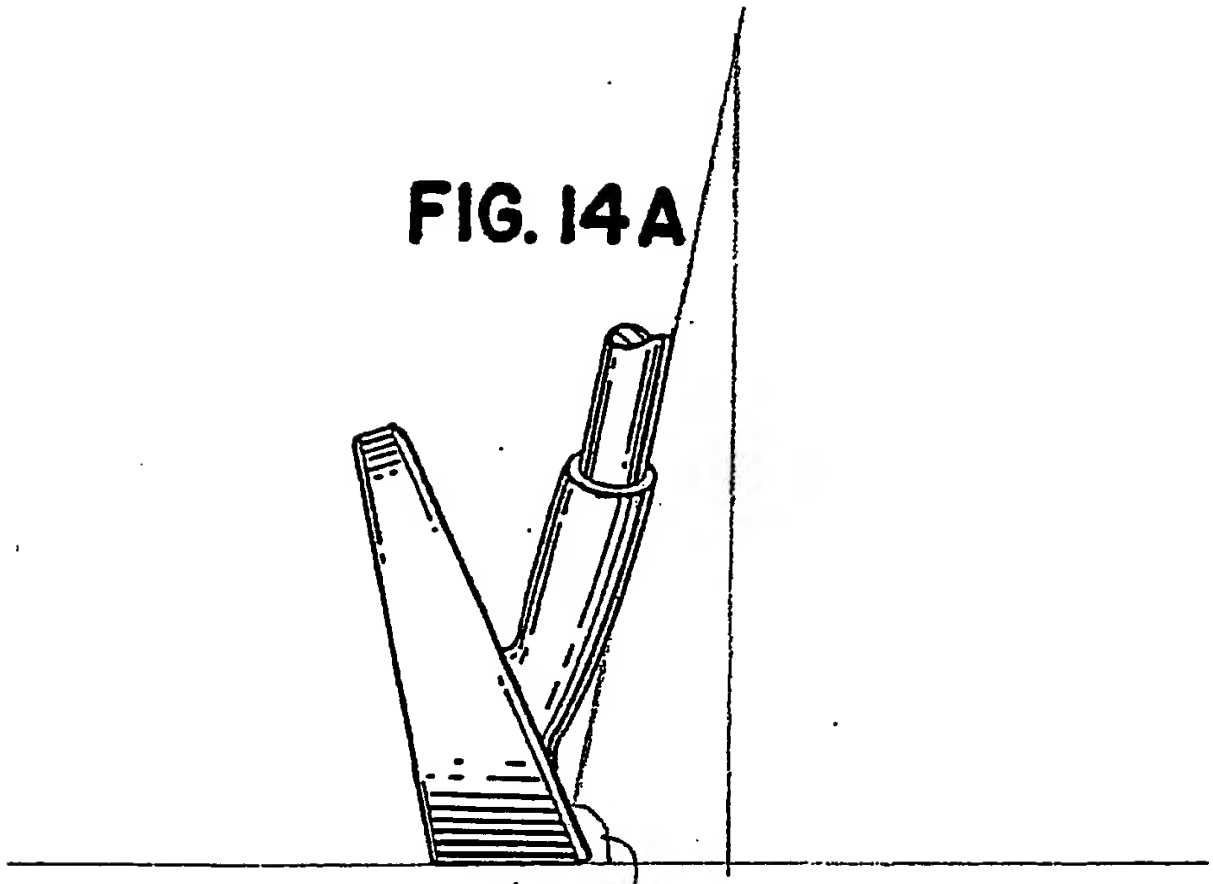


FIG. 14B

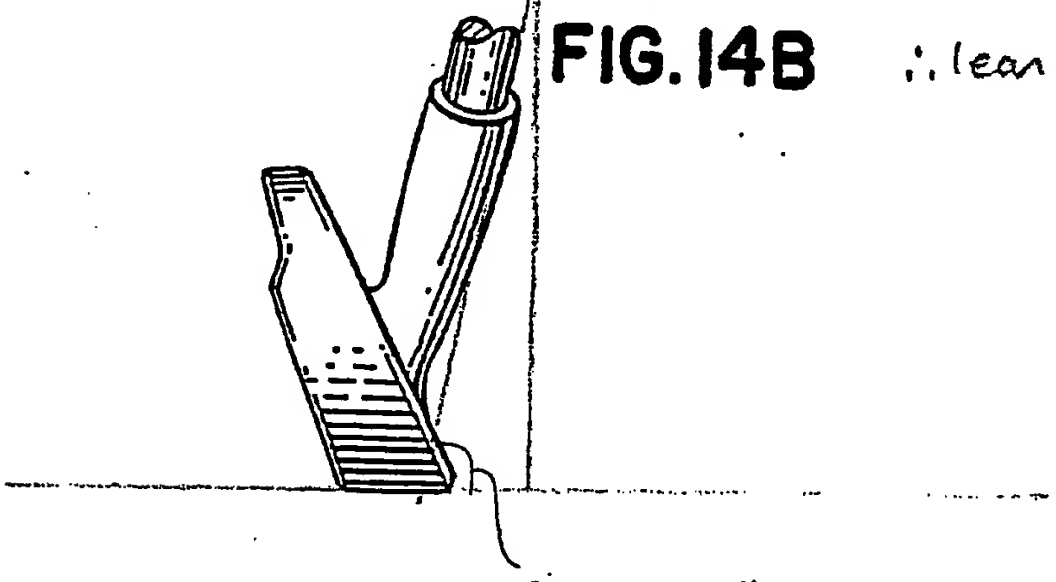


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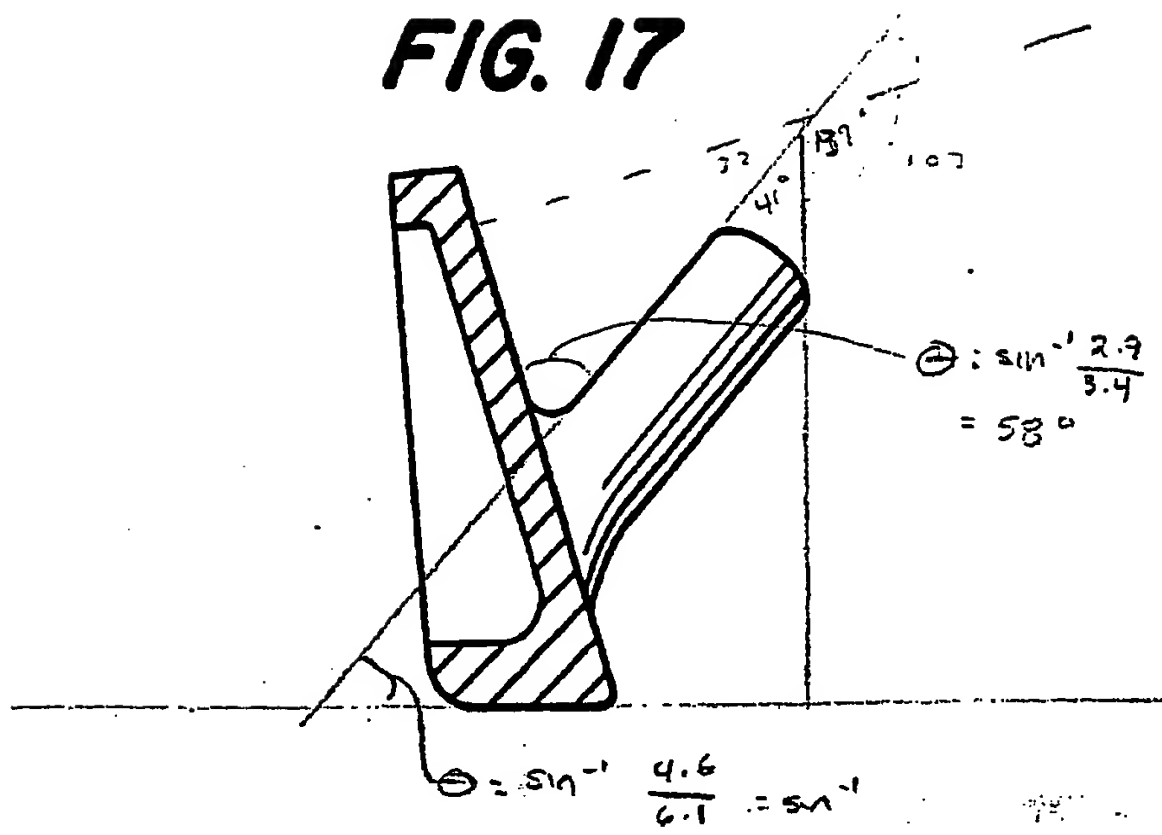
FIG. 17



ATTORNEY DOCKET: 2002832-0002

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Sosin	Examiner:	Blau, S.
Serial No.:	09/248,515	Art Unit:	3711
Filing Date:	February 8, 1999		
Title:	GOLF CLUB AND METHOD OF DESIGN		

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

DECLARATION UNDER 37 C.F.R. § 1.132

I, J. Rodney Loesch, declare as follows:

1. I am the Director of Golf at the Connecticut Golf Club, a position I have held for 19 years, and for the last three years I have been the President of the Metropolitan PGA . I am well familiar with the variety and design of golf clubs, in particular irons and wedges, that are made and used by amateurs and professionals alike.

2. I have reviewed and am familiar with the specification of United States Patent Application No. 09/248,515 (the '515 application) for "Golf Club and Method of Design" by Mr. Howard Sosin. I understand that Mr. Sosin has submitted claims in this patent application that relate to a an iron with a single straight shaft connected to the head so that, when the head rests on its sole at its design loft, the shaft forms a non-zero lean angle with the vertical. I understand that this non-zero lean angle is preferably within the range of 3-10°.

3. I understand that the Patent Examiner who is evaluating the '515 application has said that some of the claims to the golf club invented by Mr. Sosin are not patentable because the invention that they define is the same as what is depicted in Fig. 2 of United States Patent No. 3,961,796 to Thompson ("Thompson"). I have reviewed and understood Thompson, and I disagree with the Examiner's assertion.

4. I have never seen an iron or wedge with a non-zero lean angle. Prior to my conversations

with Mr. Sosin, I had never heard of nor considered a wedge with a non-zero lean angle.

5. Thompson describes an otherwise standard wedge with the special feature of a downwardly tapered keel. I do not view Fig. 2 of Thompson as depicting a wedge with a non-zero lean angle. Rather, Fig. 2 of Thompson highlights certain features of the club head such as the plug material **23**, and front face edge portion **14a**. The shaft **30** is only represented as a dashed line. Particularly given that the concept of a lean angle is so unusual, I would expect a picture intended to illustrate a lean angle to discuss it extensively; Thompson makes no mention of the shaft/hosel/head connection angle. I would therefore expect that, consistent with standard practice, Thompson intended no lean angle. I appreciate that the Figure itself could be construed to depict a lean angle, but I understand this to reflect an imprecise rendition of a three-dimensional object in two dimensions rather than an intended deviation from the norm.

5. I, J. Rodney Loesch, declare that all statements made herein of my own knowledge are true and that these statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful, false statements and the like are made punishable by fine or imprisonment, or both, under §1001 of Title 18 of the United States Code and that such willful, false statements may jeopardize the validity of the application or any patents that may issue thereon.

Respectfully Submitted,

Name: J. Rodney Loesch
Title: Director of Golf
Date: 02/17/2004

3640366v1

Date Filed: March 3, 2004

The Patent and Trademark Office stamping sets forth the receipt date (or both the receipt date and the Serial Number) of documents identified as follows:

Applicant: Sosin
Serial No.: 09/248,515
Filing Date: February 8, 1999
Title: Golf Club and Method of Design

1. Transmittal Letter (1 page);
2. Petition for Extension of Time Under 37 C.F.R. §1.136 (1 page);
3. Response to Office Action Under 37 C.F.R. §1.116 (12 pages);
4. Exhibits (9 pages);
5. Declaration Under 37 C.F.R. §1.132 (2 pages);
6. Check in the amount of $55.00; and
7. Return Postcard.

Attorney: BHJ/CEL Atty. Docket No.: 2002832-0002
3660224_1.DOC

BHJ/CEL/LAW

Date Filed: March 3, 2004

The Patent and Trademark Office stamping sets forth the receipt date (or both the receipt date and the Serial Number) of documents identified as follows:

Applicant: Sosin
Serial No.: 09/248,515
Filing Date: February 8, 1999
Title: Golf Club and Method of Design

1. Transmittal Letter (1 page);
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3. Response to Office Action Under 37 C.F.R. §1.116 (12 pages);
4. Exhibits (9 pages);
5. Declaration Under 37 C.F.R. §1.132 (2 pages);
6. Check in the amount of $55.00; and
7. Return Postcard.

Attorney: BHJ/CEL Atty. Docket No.: 2002832-0002
3660224_1.DOC

Fild Golf

CHOATE HALL & STEWART

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